

CLAIMS

1. An apparatus for processing biological materials, the apparatus comprising a plurality of stacked, rotatable platforms, each platform having a plurality of sample receiving areas located thereon, the apparatus having a first dispensing member mounted for dispensing reagent and/or a sample to a sample receiving area on a first stacked platform and a second dispensing member mounted for dispensing reagent and/or a sample to a sample receiving area on a second stacked platform, each platform being rotatable to move sequential sample receiving areas thereon into orientation with the mounted reagent dispensing member to receive reagent therefrom.
2. An apparatus as claimed in claim 1, wherein the apparatus further comprises a third dispensing member mounted for dispensing reagent and/or a sample to a sample receiving area on a third stacked platform.
3. An apparatus as claimed in either claim 1 or 2, wherein each stacked platform has an associated dispensing member mounted for dispensing reagent and/or a sample to a sample receiving area on each stacked platform.
4. An apparatus as claimed in any one of claims 1 to 3, wherein the apparatus further comprises a removing member for removing process waste from the sample receiving area.
5. An apparatus as claimed in any preceding claim, wherein the apparatus is substantially contained within a releasably sealed housing.
6. An apparatus as claimed in any preceding claim, wherein the housing is connected to an air extraction means.

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7. An apparatus as claimed in any preceding claim, wherein the platforms are rotatable about a common central axis.
8. An apparatus as claimed in any preceding claim, wherein the platforms rotate in unison.
9. An apparatus as claimed in any one of claims 1 to 7, wherein the platforms rotate independently.
10. An apparatus as claimed in any preceding claim, wherein the platforms are substantially horizontal and stacked above one another vertically.
11. An apparatus as claimed in any of claims 7 to 10, wherein the platform has one or more slots disposed from the edge of the platform to the centre of the platform to facilitate the removal of the platform from the axis.
12. An apparatus as claimed in any preceding claim, wherein the platform is substantially circular or octagonal in shape.
13. An apparatus as claimed in any preceding claim, wherein the sample receiving area is angled relative to said platform in the range of 2° to 25° to allow liquid to collect at one part of sample.
14. An apparatus as claimed in any preceding claim, wherein the apparatus contains from 4 to 10 platforms.
15. An apparatus as claimed in any of claims 4 to 14, wherein the dispensing or removing member comprise one or more tubes
16. An apparatus as claimed in claim 15, wherein the or each tube is manufactured from aluminium, optionally having a PTFE coated interior.
17. An apparatus as claimed in claim 15, wherein the or each tube comprises a PTFE tube disposed within an aluminium tube.

18. An apparatus as claimed in any of claims 4 to 17, wherein the dispensing and removing member can move vertically relative to the sample receiving area.
19. An apparatus as claimed in any one of claims 15 to 18, wherein separate tubes are provided to dispense different reagents.
20. An apparatus as claimed in any of claims 4 to 19, wherein the reagents are dispensed and/or the waste material removed by means of peristaltic pumps.
21. An apparatus as claimed in any preceding claim, wherein the apparatus has adjustable feet in order to allow the apparatus to be placed on surfaces that in have an incline.
22. An apparatus as claimed in any preceding claim, wherein the samples are held in or on one or more of the following holding apparatus: a Petri dish, a slide, a slide cover slip or a culture chamber
23. An apparatus as claimed in any preceding claim, wherein the samples have an identification means disposed thereon.
24. An apparatus as claimed in claim 23, wherein the identification means comprises a bar code, a dot code or a radio frequency.
25. An apparatus as claimed in any preceding claim, wherein the apparatus further comprises a sensor for detecting the presence of a sample and/or identifying the sample.
26. An apparatus as claimed in claim 22, wherein the sensor is an optical sensor, a magnetic sensor, a laser scanner or a radio transmitter receiver.
27. An apparatus as claimed in any preceding claim, wherein the apparatus further comprises a sensor for detecting characteristics of the processed biological material.

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28. An apparatus as claimed in any preceding claim, wherein the apparatus further comprises a UV light source.
29. An apparatus as claimed in any preceding claim, wherein the apparatus further comprises an air conditioning means.
30. An apparatus as claimed in claim 29, wherein the air conditioning means is used for drying samples.
31. An apparatus as claimed in any preceding claim, wherein the apparatus further comprises a turbidity monitor for assessing the turbidity of a sample.
32. An apparatus as claimed in any of claims 4 to 30, wherein removing member is connected to a waste tank or waste disposal device.
33. An apparatus as claimed in any preceding claim, wherein an electronic control unit/central processing unit controls the components of the apparatus.
34. An apparatus as claimed in claim 33, wherein the electronic control unit/central processing unit is programmable.
35. An apparatus as claimed in claim 33 or 34, wherein the sensors relay information to the unit.
36. An apparatus as claimed in any of claims 33 to 35, wherein the control unit can interface with a printer and/or a computer.
37. An apparatus as claimed in any preceding claim, wherein the apparatus can process approximately 65 samples.
38. An apparatus as claimed in any preceding claim, wherein the apparatus is used for processing biological material for cytogenetic analysis.

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39. An apparatus as claimed in any preceding claim, wherein the apparatus is used for processing surface culture cells in order to analyse the associated chromosomes.
40. An apparatus as claimed in any one of claims substantially as herein described with reference to and as illustrated in the accompanying drawings.

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